

Application No. 10/566,367

Docket No.: 050203-0140

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Kiminobu HIRATA

**RESPONSE UNDER 37 CFR 1.116
EXPEDITED PROCEDURE**

Application No.: 10/566,367

Customer No.: 31824

Filed: October 30, 2006

Confirmation No.: 5551

Group Art Unit: 3748

Examiner: Diem T. Tran

Title: EXHAUST GAS PURIFICATION APPARATUS OF ENGINE

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Commissioner for Patents
P.O. Box 1450
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APPROVED: /DT/

05/27/2008

RESPONSE TO OFFICE ACTION

Sir:

This paper is submitted in response to the final Office Action dated January 9, 2008, the period for response having been extended one-month to May 9, 2008.

This application has been carefully reviewed in light of the Office Action dated January 9, 2008. Claims 1 to 5 are currently in the application, with claim 1 being the sole independent claim. Reconsideration and further examination are respectfully requested.

Claim 1 is rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,884,475 (“Hofmann”); and claims 2 to 5 are rejected under 35 U.S.C. § 103(a) over Hofmann in view of U.S. Patent No. 6,041,594 (“Brenner”). Applicant respectfully submits that the claimed invention is patentably distinguishable over the applied references for at least the following reasons.

Initially, Applicant thanks the Examiner for the courtesies extended to Applicant’s undersigned representative during the telephonic interview conducted on April 29, 2008. As discussed during the interview, Applicant maintains that Hofmann does not disclose or suggest at least the feature included in claim 1 of supplying high pressure air into a nozzle, from which a liquid reducing agent is injection-supplied into an exhaust gas passage, during operation of the engine when the injection flow rate of the liquid reducing agent becomes zero. While no agreement was reached at the conclusion of the interview, Applicant hereby resubmits the arguments with respect to Hofmann for reconsideration as requested by the Examiner.

Hofmann is directed to an exhaust-gas purification system in which liquid in a supply line is drained using pressurized gas. Hofmann is concerned with preventing frost damage to the system when temperatures drop below the freezing point of the liquid. *See* Hofmann, col. 2, ll. 34-40. Accordingly, Hofmann describes a method in which the liquid is drained from the supply line when the combustion system/engine is shutdown. *See* Hofmann, col. 2, ll. 48-50.

The claimed invention, on the other hand, is concerned with a situation that occurs during operation of an engine rather than after the engine is shut down. Specifically, the claim

invention is concerned with preventing clogging of a nozzle when the water content of a liquid reducing agent in the nozzle evaporates due to exhaust heat during operation of the engine and reducing agent constituents are deposited and clog the nozzle. *See* ¶ [0009]. Nothing in Hofmann is seen to mention or even suggest this potential clogging problem, let alone discuss solutions for preventing a clog from forming in the system during operation of the engine.

During the interview, the Examiner noted that Hofmann describes removing the urea solution from parts of the system “[i]n connection with the operation of the internal-combustion engine.” Hofmann, col. 8, ll. 51-53. Applicant submits that this portion of Hofmann does not specify when the urea solution is removed. However, the specification of Hofmann repeatedly makes it clear that this removal operation is performed after the combustion system/engine is shut down and not during operation of the engine. *See e.g.*, col. 2, ll. 48-50, col. 4, ll. 28-32, col. 6, ll. 25-30, 45-50.

Therefore, Hofmann is not seen to disclose or suggest at least the feature of supplying high pressure air into a nozzle, from which a liquid reducing agent is injection-supplied into an exhaust gas passage, during operation of the engine when the injection flow rate of the liquid reducing agent becomes zero. Accordingly, independent claim 1 is believed to be allowable over the applied references. Reconsideration and withdrawal of the § 103(a) rejection of claim 1 are respectfully requested.

Claims 2 to 5 depend, either directly or indirectly, from independent claim 1 discussed above and therefore are believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

In view of the foregoing remarks, the application is believed to be in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 502203 and please credit any excess fees to such deposit account.

Respectfully submitted,

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